

**CIHM
Microfiche
Series
(Monographs)**

**ICMH
Collection de
microfiches
(monographies)**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1995

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé la meilleure exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Généralité (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The copy filmed here has been reproduced thanks to the generosity of:

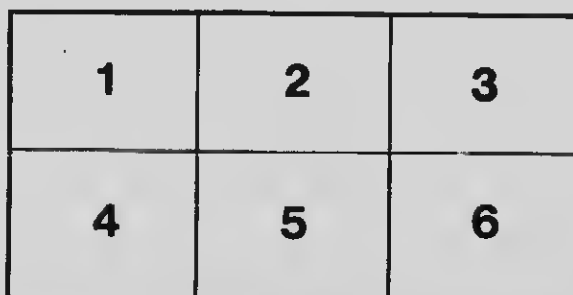
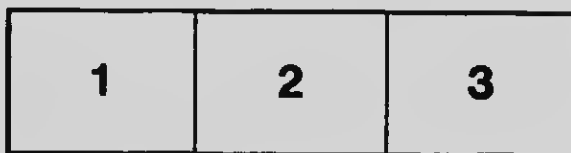
National Library of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagram illustrates the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

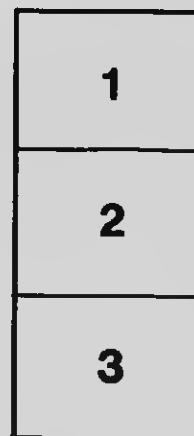
Bibliothèque nationale du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



4.5

2.8

2.5

5.0

3.2

2.2

5.6

6.3

3.6

7.1

4.0

2.0

8.0

9.0

10

11.2

12.5

14

16

18

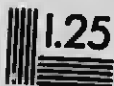
20



1.1



1.8



1.25



1.4



1.6



APPLIED IMAGE Inc

1653 East Main Street
Rochester, New York 14609 USA
(716) 482 - 0300 - Phone
(716) 288 - 5989 - Fax

Can.
Pam.
I

International Geological
Congress, 12th, Toronto,
1913.



CONGRÈS GÉOLOGIQUE INTERNATIONAL

XII^e SESSION, CANADA, 1913

SECOND CIRCULAR—CANADIAN EDITION

REPRINT OF PREFACE ONLY.

QE 1
I6
1913a
V. 2a
P. 44



National Library
of Canada

Bibliothèque nationale
du Canada

PREFACE TO CANADIAN EDITION OF SECOND CIRCULAR

VICTORIA MEMORIAL MUSEUM,

OTTAWA, CANADA,

MARCH 1ST, 1913

Introduction.

The Twelfth Session of the International Geological Congress is to be held in Canada this year, (1913), this being the first session in this country and the third on the western side of the Atlantic. The session is being held here on the invitation of the Dominion and Ontario Governments, the Canadian Mining Institute and the Royal Society of Canada.

It is felt by the Executive Committee that a few notes outlining the object, work and history of the Congress in general will be appreciated.

Geology is defined as the science treating of the earth's history and it includes the study of its mineral deposits and the floras and faunas which have successively clothed and peopled the earth's surface. The direct value of geological work is now fully recognized, especially by those connected with mining, civil, and hydraulic engineering, it being daily applied not only to mining problems, but to many others, such as water supplies; foundations for bridges and large buildings; dams; road construction, etc. In fact, in the recognition of the commercial importance of geology there is danger that some branches of the science may be overlooked or slighted. It is well, therefore, to point out that in many cases the application of geology to engineering and commercial work has been made possible only by the study of problems which appear to be solely of scientific interest. The International Geological Congress takes care that all aspects of geology receive adequate consideration in its sessions.

Object and Work.

The object of the International Geological Congress is, briefly, the advancement of knowledge concerning the earth both in the field of pure geological science and in its application to the arts and industries, through the association and co-operation of leading geologists and engineers of all nations.

The more important methods by which it endeavors to accomplish its aim are as follows:—

1. Meetings.
2. Publications.
3. International Committees.
4. Excursions.
5. Prizes.

1. Meetings.

The meetings are held every three years in different countries, and each session lasts from seven to ten days. The meetings are attended by members from every civilized country. The leading countries, societies and universities are represented by specially appointed delegates. Papers bearing on questions of general interest are read and discussed. As main topics for discussion subjects of scientific or economic importance are selected in advance so that every member who can contribute knowledge on the subject may be prepared to do so. In this way, the exact state of present knowledge on these topics is put forth and made known.

2. Publications.

The transactions of the congress are published as soon after the session as possible. They contain the more important papers and discussions, and a general report on the business and work of the congress. The transactions of the Eleventh Congress form two volumes totaling 1413 pages. In addition, a quarto volume of papers on "Changes of Climate since the Maximum of the Last Period of Glaciation," and two quarto volumes and a large atlas on "The Iron Ore Resources of the World" stand to the credit of the Eleventh Congress.

3. International Committees.

Committees are formed to deal with questions requiring international or concerted action.

Such subjects as the standardization of geological colours and signs employed on maps, the standardization of geological nomenclature, and the planning of general geological maps covering an entire continent have been dealt with by these committees.

4. Excursions.

Excursions have become an outstanding feature of the sessions, special facilities being provided in the country in which the meeting is held to enable the delegates coming from every portion of the world to make, at small expense and under expert guidance, a personal study of its geological structure and mineral resources.

The value of the excursions is not confined to what is seen and learned. They afford the best opportunity for the members to fraternize and to become acquainted with each other and with each others' work and ideas. The informal discussions of the geological problems presented in the field and the information that is thus brought out concerning the methods employed in the various parts of the world in attacking and solving similar problems: and the use that has been found for neglected or little known substances; these and similar discussions are perhaps the most instructive and valuable features of the Congress.

5. Prizes.

The Congress affords the necessary machinery for awarding prizes for special achievement in the science or application of geology. The Spendiarow prize founded by a Mr. Spendiarow, of St. Petersburg, Russia, in memory of his son, is awarded at each session for the most important work accomplished by an individual since the preceding session. Special prizes have been awarded at various sessions.

Value of the Congress.

From even such a brief recital of the object and work of the Congress, its importance is evident, but a few other points may be touched upon. It has secured the co-operation of the governments of various countries as well as of men of science that has resulted in the magnificent geological map of Europe now approaching completion. A similar geological map of the whole world will be undertaken. As an example of valuable international studies may be mentioned the very careful investigation into the iron ore resources of the world, the results of which are embodied in a series of magnificent volumes, in which the extent, quality and mode of occurrence of the iron ore resources of every country of the world are set forth, and illustrated by means of maps and plans. A similar plan of study is now in progress to determine the coal resources of the world, a full report of which will be issued in 1913 before the meeting of the Congress in Canada. The Congress serves, in a sense, as an international clearing house for geology. These great gatherings of distinguished scholars of all nationalities have aroused greater interest in geology on the part of private individuals, corporations, and governments, given it a higher standing as a science, and rendered possible its increased economic application.

The country entertaining the Congress is repaid in many ways. The excursions are participated in by the more eminent geologists and mining engineers of the world, giving them a knowledge of its resources and possibilities, which they spread abroad, for they are the advisers of capital; the writers of text books and authoritative articles; and the instructors in universities and schools. Their criticisms and suggestions based upon their experience with similar problems and conditions in other parts of the world are helpful and stimulating to the home geologists and mining engineers. After leaving any country, they have learned where to obtain reliable information concerning it and they follow its developments and discoveries as announced in the press and technical papers.

Character of Attendance.

Geologists from every quarter of the globe attend the Congress. The word "International" in the title was well chosen and the character of the attendance at each Congress has been remarkable for the number of different nationalities represented. As to the personnel of the members, they may be broadly classed in three divisions.

1st. Professors and teachers from the leading colleges and universities as well as the technical and mining schools.

2nd. Officers of government geological surveys or equivalent organizations.

3rd. Geologists and mining engineers in private practice.

History.

The foundation of the Congress was inspired by the collections of geological maps and sections from various regions of North and South America as well as from many countries of Europe which were shown at the International Exhibition in Philadelphia, in 1876. The advantage of such comparative study so deeply impressed visiting geologists that at the annual meeting of the American Association for the Advancement of Science held in Buffalo, August, 1876, a committee was appointed to arrange for an international congress of geologists at the 1878 Paris Exhibition.

It is interesting to note that Dr. T. Sterry Hunt, who from 1847 to 1872 was chemist and mineralogist to the Geological Survey of Canada, was Secretary of this first Committee—the Comité Fondateur of 1876, and at the first session of the Congress held in Paris in 1878, Messrs. A. R. C. Selwyn, T. Sterry Hunt, and Paul de Cazé were the Canadian delegates, twenty-three countries being represented.

Previous Sessions.

The following table gives particulars of previous sessions including the attendance and number of countries represented at each:—

Number of Members, Delegates, Vice-Presidents and Countries Represented at each Session.

Session	Year	Country	Members		Delegates	Vice Presidents	Countries Represented
			Enrolled	Attending			
1st	1878	France	310		7	18	23
2nd	1881	Italy	420	224	23	19	23
3rd	1885	Germany	455	258	15	20	22
4th	1888	England	337	140	68	22	25
5th	1891	U.S.A.	546	251	39	31	24
6th	1894	Switzerland	401	273	18	15	20
7th	1897	Russia	1037	704	139	40	27
8th	1900	France	1016	461	80	46	31
9th	1903	Austria	664	303	39	25	30
10th	1906	Mexico	707	321	83	27	33
11th	1910	Sweden	879	625	262	74	36

Members are usually professional geologists or persons occupied in an allied profession, though amateurs are welcome members and much important geological work has been accomplished by amateurs whose love for the science has been their only inducement to work. At each Congress more members are enrolled than actually attend and those who do not attend derive benefit from the Transactions which are sent to all members and contain the more important papers and discussions.

Delegates are members of the Congress who have been specially appointed to represent a government, university, or society.

Vice-Presidents are members of the Congress, usually delegates, elected at the first meeting of each Session to represent their country on the Council of the Congress.

Organization and Government.

Council.

The Congress is governed by a Council constituted as follows:—

- (a) Members of the Organization Committee of the Session of the Congress being held.
- (b) Presidents in office of Geological Societies.
- (c) Directors of important Geological Surveys.
- (d) Members of the " Bureau " (Vice-Presidents and other office holders elected by the members at their first meeting.)
- (e) Members of the Congress whom the Council may add to its number.

Bureau.

A list of names for the " Bureau " is submitted by the Council for the approval of the members at the first meeting of the Session. The " Bureau " is charged with the arrangements of the orders of the day for the meetings.

The General Secretary and Officers (Bureau) of a Session are responsible for the general management of the Congress affairs until the next Session has met and their successors have been appointed. (See Transactions, 1st Session, Paris, 1878, page 274).

Organization Committee.

An Organization Committee or an Executive Committee or both are appointed for each Session by the Government or institutions whose invitation for the ensuing Session has been accepted by the previous Session, and local arrangements are left to it. The names of members of these Committees in Canada are given in the Second Circular.

Honorary Councillors and Members of the Finance Committee.

In addition to the Executive and Organization Committees the following gentlemen are giving their assistance in Canada as Honorary Councillors and members of the Finance Committee:—

- Chairman.*—G. G. S. LINDSEY, B.A., K.C., President, Western Development Company, Limited; Vice-President, Vancouver Portland Cement Company, Limited, 27 Manning Arcade, Toronto.
- J. A. M. AIKENS, M.A., K.C., M.P., Winnipeg,
CHARLES CLAYTON AMBERY, Secretary, Hiram Walker & Sons, Limited, Walkerville, Ontario.
- HON. F. H. ARMSTRONG, K.C., Commissioner of Public Works and Mines of Nova Scotia, Halifax.
- CHARLES N. BELL, Secretary, Winnipeg Board of Trade, Winnipeg.
- J. H. BROCK, Managing Director, Great West Life Assurance Company, Winnipeg.
- STANLEY BROCK, President, Stanley Brock Company, Limited, Winnipeg.
- LT. COL. JEFFREY H. BURLAND, B.A.Sc., Montreal.
- PATRICK BURNS, President, P. Burns Company, Limited, Calgary.
- GEORGE J. BURY, Vice-President, Canadian Pacific Railway Company, Winnipeg.
- R. P. BUTCHART, General Manager, Vancouver Portland Cement Company, Limited, Victoria, British Columbia.
- HIS HONOUR, D. C. CAMERON, Lieutenant-Governor of Manitoba, Winnipeg.
- THOMAS CANTLEY, Vice-President and General Manager, Nova Scotia Steel and Coal Company, Limited, New Glasgow, Nova Scotia.
- LT. COL. J. CARSON, President, Crown Reserve Mining Company, Limited, Montreal.
- C. V. CORLESS, B.Sc., Manager, Mond Nickel Company, Limited, Victoria Mines, Ontario.

Honorary Councillors—Continued

- EUGENE COSTE, E.M.**, President and Managing Director,
The Canadian Western Natural Gas, Light, Heat and
Power Company, Limited, 128 Seventh Avenue East,
Calgary.
- R. W. COULTHARD, B.Sc.**, Manger, West Canadian Collieries,
Limited, Blairmore, Alberta.
- J. D. CREACHAN**, Newcastle, New Brunswick.
- HON. C. W. CROSS, B.A., LL.B.**, Edmonton.
- HON. NATHANIEL CUNRY, LL.D.**, President, Canadian Car
and Foundry Company, Limited, Montreal.
- HON. C. R. DEVLIN, LL.D.**, Minister of Colonization, Mines
and Fisheries, Quebec.
- D. A. DUNLAP**, Barrister-at-Law, Secretary-Treasurer, Hol-
linger Gold Mines, Limited, 85 Bay Street, Toronto.
- HON. SENATOR J. V. ELLIS, LL.D.**, St. John, New Brunswick
- W. SANFORD EVANS, M.A.**, 43 Edmonton Street, Winnipeg.
- CHARLES FERDIE**, Consulting Mining Engineer; Director,
Lethbridge Collieries, Limited, Montreal.
- J. W. FLAVELLE, LL.D.**, Member of the Board of Governors
of the University of Toronto, Queens Park, Toronto.
- A. C. FLUMERFELT**, President, International Coal and Coke
Company, Limited, Victoria, British Columbia.
- THOMAS GIBSON, B.A.**, Director, Lake Superior Corporation,
Traders' Bank Building, Toronto.
- T. W. GIBSON**, Deputy Minister of Mines of Ontario, Depart-
ment of Lands, Forests and Mines, Toronto.
- D. B. HANNA**, Manager, The Canadian Northern Railway,
Toronto.
- R. E. HARRIS, D.C.L., K.C.**, President, Nova Scotia Steel &
Coal Company, Limited, Halifax.
- HON. W. H. HEARST, K.C.**, Minister of Lands, Forests and
Mines of Ontario, Toronto.
- MILTON HERSEY, M.Sc., LL.D.**, President, Milton Hersey
Company, Limited, Montreal.
- J. A. JACOBS**, Jacobs Building, Montreal.
- W. STEEL JOHNSTON, B.A., B.Sc.**, Consulting Mining Engin-
cer, Montreal.

Honorary Councillors—Continued

- FREDERICK KEFFER, M.E., Consulting Engineer, British Columbia Copper Company, Limited, Greenwood, British Columbia.
- ROBERT KELLY, President, Kelly Douglas Company, Limited, Vancouver.
- ABNER KINGMAN, Esq., Director of the Canadian Bank of Commerce, Montreal.
- Z. A. LASH, K.C., Vice-President, The Canadian Northern Railway, Toronto.
- R. W. LEONARD, C.E., Chairman, National Transcontinental Railway Commission; President, Coniagas Mines, Limited, St. Catherines, Ontario.
- SIR WILLIAM MACKENZIE, Knight, President, Canadian Northern Railway, Toronto.
- W. D. MATTHEWS, Director, Canadian Pacific Railway Company; President, Consolidated Mining and Smelting Company of Canada, Limited, 89 St. George Street, Toronto.
- SIR RICHARD McBRIDE, Knight, LL.B., K.C., Premier and Minister of Mines of British Columbia, Victoria.
- F. B. McCURDY, M.P., Halifax.
- D. H. McDougall, General Manager, Dominion Coal Company, Limited, Glace Bay, Cape Breton, Nova Scotia.
- D. LORNE MCGIBBON, President, La Rose Consolidated Mines Company, Limited, Montreal.
- P. L. NAISMITH, Manager, Department of Natural Resources, Canadian Pacific Railway Company, Calgary.
- SIR E. B. OSLER, Knight, M.P., President, Dominion Bank; Director, Canadian Pacific Railway Company, Toronto.
- COL. SIR HENRY M. PELLATT, Knight, C.V.O., A.D.C., Toronto.
- T. H. PLUMMER, Secretary, Northey Plummer, Limited, Confederation Life Building, Toronto.
- R. T. RILEY, J.P., Managing Director, Northern Trust Company, Winnipeg.
- W. FLEET ROBERTSON, B.Sc., Provincial Mineralogist, Victoria, British Columbia.

Honorary Councillors—Continued

- M. K. RODOERS, Mining Engineer, Seattle, Washington, U.S.A.
- HON. WALTER SCOTT, B.A., K.C., Premier of the Province of Saskatchewan, Regina.
- HON. A. L. SIFTON, B.A., K.C., Premier of the Province of Alberta, Edmonton.
- GEORGE R. SMITH, Member of the Legislative Council of Quebec; General Manager of the Asbestos Manufacturing Company, Limited, Montreal.
- R. H. STEWART, B.A.Sc., General Manager, Consolidated Mining and Smelting Company of Canada, Limited, Trail, British Columbia.
- G. S. C. STRATHY, Supervisor of Ontario District, Royal Bank of Canada, Toronto.
- HUGH SUTHERLAND, Canadian Northern Railway, Winnipeg.
- W. G. TRETHERWEY, 94 Binscarth Road, Toronto.
- A. P. TURNER, President, The Canadian Copper Company, Copper Cliff, Ontario.
- JAMES W. TYRRELL, C.E., 7 Hughson Street South, Hamilton, Ontario.
- ALFRED THOMPSON, M.D., C.M., M.P., Dawson, Yukon Territory.
- SIR EDMUND WALKER, Knight, C.V.O., LL.D., F.G.S., President, The Canadian Bank of Commerce; Chairman, Board of Governors, Toronto University, Toronto.
- J. H. WALSH, General Manager, The Quebec Central Railway, Sherbrooke, Quebec.
- O. E. S. WHITESIDE, M.Sc., Manager, International Coal and Coke Company, Limited, Coleman, Alberta.
- SIR WILLIAM WHYTE, Knight, Director, Canadian Pacific Railway Company, Winnipeg.
- D. R. WILKIE, President, The Imperial Bank of Canada, Toronto.
- SIR JOHN WILLISON, Knight, Canadian Editorial Correspondent of the Times, London, England; Proprietor, Daily News, Toronto.
- E. R. WOOD, President, Dominion Securities Company, Limited, Toronto.
- LT.-COL. J. W. WOODS, 323 Chapel Street, Ottawa.



